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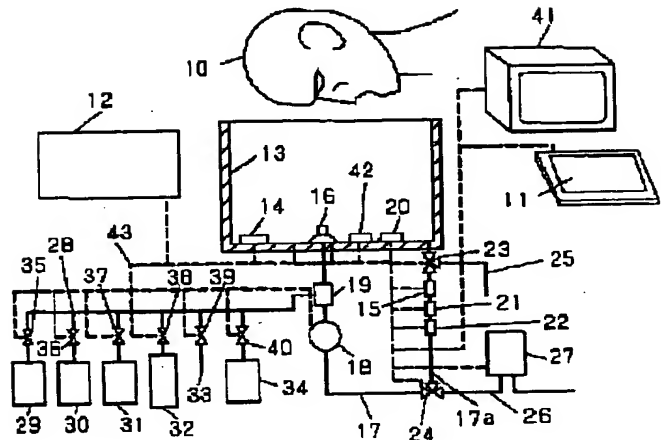
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TITLE : BEAUTY DEVICE



ABSTRACT : PROBLEM TO BE SOLVED: To execute a beauty processing being optimum to a living body by detecting biological skin quality information and controlling the operation of a skin quality improving means based on the information.

SOLUTION: This beauty device is provided with skin quality improving means 16, 18, 19 and 29-34 for improving the state of the deteriorated skin of the living body, its control means 12, a control information input means 11 for inputting skin quality information to improve the beauty of the living body and skin quality detecting means 14, 15, 20, 21 and 22 for detecting skin quality information after/before the skin quality improvement processing of the living body and during the processing. Then, the control means controls the skin quality improving means based on respective pieces of information of the control information input means and the skin quality detecting means.

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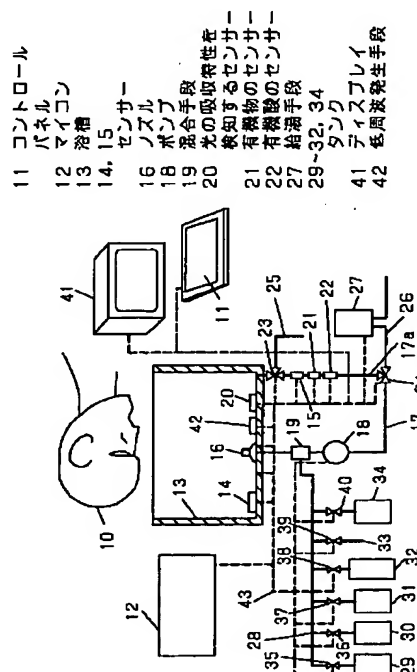
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(54)【発明の名称】 美容装置

(57) 【要約】

【課題】 本発明は生体の肌質を改善する美容装置に関するもので、生体の肌質情報を検知し、この情報をもとに肌質改善手段の動作を制御することで、生体に最適な美容処理を施すものである。

【解決手段】 生体の劣化した肌の状態を改善する肌質改善手段16、18、19、29～34とその制御手段12と、生体の美容を改善するための肌質情報を入力する制御情報入力手段11と、生体の肌質改善処理前後及び処理中の肌質情報を検知する肌質検知手段14、15、20、21、22を備え、制御情報入力手段と肌質検知手段の各情報に基づいて制御手段で肌質改善手段を制御するものである。



【特許請求の範囲】

【請求項1】劣化した肌の状態を改善する肌質改善手段と、前記肌質改善手段を制御する制御手段と、生体の肌質を改善するための美容情報を前記制御手段に入力する制御情報入力手段と、生体の肌質改善処理前と肌質改善処理中及び肌質改善処理後の肌質の少なくとも1つを検知する肌質検知手段と、前記肌質検知手段の情報により、生体の肌質改善処理前と肌質改善処理中および肌質改善処理後の肌質情報と前記美容情報を表示する表示手段とを備え、前記制御手段は、前記制御情報入力手段と前記肌質検知手段からの情報に基づいて前記肌質改善手段を制御してなる美容装置。

【請求項2】肌質検知手段は光吸収測定手段である請求項1記載の美容装置。

【請求項3】肌質検知手段は生体の表皮細胞生成周期を検知する請求項1または2記載の美容装置。

【請求項4】肌質改善手段は少なくとも1種類の保湿成分により生体の肌質を改善する請求項1ないし3のいずれか1項記載の美容装置。

【請求項5】肌質改善手段は、生体の肌に堆積した角質を剥離する請求項1ないし4のいずれか1項記載の美容装置。

【請求項6】肌質改善手段は、生体の肌の角質を軟化する請求項1ないし5のいずれか1項記載の美容装置。

【請求項7】肌質改善手段は、細胞による吸収性の高い機能水を供給する請求項1ないし6のいずれか1項記載の美容装置。

【請求項8】肌質改善手段は抗酸化性物質を肌に供給する抗酸化性物質供給手段とした請求項1ないし7のいずれか1項記載の美容装置。

【請求項9】肌質改善手段が抗酸化性物質添加手段と低周波発生手段からなる請求項1ないし8のいずれか1項記載の美容装置。

【請求項10】肌質改善手段は細菌叢制御手段とした請求項1ないし9のいずれか1項記載の美容装置。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、人間の肌をきれいに手入れするのに使用される美容装置に関する。

【0002】

【従来の技術】従来のこの種の美容装置は特開平8-173501号公報に記載されているようなものがあった。図2に従来の美容装置の構成図を示した。この装置は、送風機5の働きで、水カップ1の水中に無数の気泡を発生させる気泡発生部材6と、水カップ1の開口部に装着されるスチームカバー2とスチームカバー2に装着された加熱ケース4に内蔵されるヒーター3とを備えている。そして、スチームカバーは蝶番8を介して脱着連結具7に連結され、スチームカバー2を閉位置としてヒーター3は加熱ケース4に流入する水を加熱して蒸気を

発生させる。さらに、スチームカバー2を開いて水カップ1の上方に臨む顔面9を、水カップ1に蓄えられた水に無数の気泡を発生させて超音波洗浄することにより、肌の洗浄を行い皮膚表面に存在する角質や老廃物を除去することで、表皮細胞の代謝を促進することで肌質を向上させていた。

【0003】

【発明が解決しようとする課題】しかしながら、従来の美容装置では以下の課題があった。

【0004】1. 美容装置の動作時間、処理強度の調整を使用者が行う場合、必ずしも最適な肌質改善処理が行われているとは限らないので、美容効果が十分に得られない。

【0005】2. 使用者がどの程度肌質改善処理を受けているか、また、どの程度効果があったか客観的に把握できない。

【0006】3. 対象物となる使用者の生体は凹凸が多いので、目的とする部分の肌質改善処理が困難である。

【0007】4. 使用者の肌の状態に応じた処理を行わないと、かえって肌の状態を損ねる場合がある。

【0008】本発明は上記従来の技術の問題点を解消するもので、肌の状態を改善する美容情報と検知した肌質情報に基づいて適切に肌の改善ができるようにすると共に、前記両情報を使用者が目で認識できるようにするものである。

【0009】

【課題を解決するための手段】本発明は、生体の劣化した肌の状態を改善する肌質改善手段と、前記肌質改善手段を制御する制御手段と、生体の劣化した肌の状態を改善するための美容情報を前記制御手段に入力する制御情報入力手段と、生体の肌質改善処理前と肌質改善処理中及び肌質改善処理後の肌質情報の少なくとも1つを検知する肌質検知手段と、前記美容情報と肌質情報を表示する表示手段を備えたものである。

【0010】そして、使用者が目的とする美容情報を制御情報入力手段に入力することで、使用者が肌質を改善したい内容、つまり部位、程度、時間、処理法などの情報のもとに肌質改善手段を動作し、生体の肌質改善処理を行うと同時に、肌質検知手段により肌質改善処理中及び肌質改善処理前後における生体の形態的特徴、表皮細胞の状況、健康状態を検知し、ここで得た肌質情報を表示手段に表示し、生体に肌質改善処理の進行状況と処理結果を認識させることができる。

【0011】さらに、肌質改善手段の制御を制御情報入力手段で得た美容情報で決定し、連続的に肌質検知手段から得られる肌質情報の変化に応じ肌質改善手段の動作を変化させることで、生体に最適な状態で肌質改善処理をおこなうことができる。

【0012】

【発明の実施の形態】本発明における請求項1記載の発

明は、生体の肌質を改善する肌質改善手段と、前記肌質改善手段を制御する制御手段と、生体の肌質を改善するための美容情報を前記制御手段に入力する制御情報入力手段と、生体の肌質改善処理前と肌質改善処理中及び肌質改善処理後の生体情報の少なくとも1つを検知する肌質検知手段と前記美容情報と生体情報を表示する表示手段とを備え、前記制御手段は、前記制御情報入力手段と前記肌質検知手段の情報に基づいて前記美容改善手段を制御するものである。

【0013】そして、美容促進手段の制御を行う制御手段に使用者が望む肌質改善処理を望む部分、肌質改善処理の内容、処理強度、時間などの美容情報を入力し、制御手段により美容促進手段の動作制御を行い、生体に肌質改善処理を施す。また、肌質改善処理前に肌質検知手段により、使用者の健康状態などの生理学的情報、形態学的情報などの生体情報を検知し、その後随時、前記生体情報を検出し、この情報を制御手段に転送し、美容促進手段の動作制御を行うことで、装置使用中の美容促進手段を生体に最適な条件下で稼働させることができる。さらに、表示手段に肌質検知手段で検知した肌質改善処理前、肌質改善処理後、肌質改善処理中の生体情報を表示することにより、美容効果を使用者に客観的に把握させることができる。

【0014】また、請求項2記載の発明は肌質検知手段を光吸収測定装置としている。そして、生体の表皮細胞に特定波長の光線を照射し、その吸収率から細胞の老化の指標となる褐色物質のAGE (Advanced Glycation End-Production)、または紫外線の照射により生体内に生成するメラニン色素の位置と現存量を検知する事ができるので、老化または肌質の低下が進行している部分を容易に推測することができるので、制御手段により肌質改善手段を制御し、この部分に集中的に肌質改善処理を施すことが可能となり、的確な肌質改善処理が可能となる。

【0015】また、請求項3記載の発明は肌質検知手段が生体の表皮細胞の生成周期を検知している。

【0016】そして、肌質検知手段と制御手段により剥離した角質の時間変化をそくていすることで、生体の表皮細胞生成周期を検知することがかとうとなり、生体の表皮堆積する角質量の推測が可能となる。よって、表皮の角質の存在状況に応じた肌質改善処理が可能となる。

【0017】また、請求項4記載の発明は肌質改善手段は少なくとも一つ以上の保湿成分により生体の肌質を改善している。そして、肌質検知手段で検知した肌質情報をもとに、肌質改善手段で保湿成分を表皮に浸透させることで、肌にしっとり感を持たせることができる。

【0018】また、請求項5記載の発明は肌質改善手段により角質を剥離するものである。そして、肌質検知手段により生体表皮の角質化が進行した部分を検知し、角質剥離手段で集中的に処理を行うことで、表皮の他の部

分に与える影響を最小にして最大の角質の剥離効果が得られる。よって、肌のかさつきを防止することができる。

【0019】また、請求項6記載の発明は肌質改善手段により表皮の角質を軟化させるものである。そして、肌質改善手段により肌質検知手段で生体の表皮上の硬化が進行した角質の位置を検知し、これらの角質を軟化させることで肌にしっとり感を与える。

【0020】また、請求項7記載の発明は肌質改善手段が細胞の吸収性の高い機能水を供給するものである。そして、肌質改善手段を機能水生成手段とし、肌質検知手段で肌の水分量を測定し、生体細胞に吸収性の高い機能水を生成し、表皮から細胞に直接浸透させることにより、効果的な肌の水分補給を行うことができる。

【0021】また、請求項8記載の発明は肌質改善手段は抗酸化性物質を供給する抗酸化性物質供給手段としている。そして、肌質改善手段を抗酸化性物質を供給する抗酸化性物質供給手段とし、肌質検知手段で表皮の酸化状態を検知し、著しく酸化が進んだ部位に集中的に抗酸化性物質を供給し、生体内の酸化脂質と反応させることで、酸化脂質の生成が抑制される。

【0022】また、請求項9記載の発明は肌質改善手段は抗酸化性物質供給手段と低周波発生手段からなるものである。そして、抗酸化性物質の供給と同時に、低周波発生手段で生体に低周波処理を行うことで、抗酸化性物質の細胞への浸透速度を増すことができるので、迅速な肌質改善が可能となる。さらに、抗酸化性物質を表皮の深部に浸透させることが可能となり、肌質検知手段で深部に酸化性物質を検知した場合でも中和が可能となり、効果的な肌質改善ができる。

【0023】また、請求項10記載の発明は肌質改善手段を細菌叢制御手段としたものである。そして、肌質検知手段で有機酸などの細菌の代謝産物を検知し、得られた情報から制御手段で、表皮上の細菌叢を推測し、皮膚常在菌以外の細菌の優占が確認された場合には、細菌叢制御手段によりこれらの細菌の増殖を抑制することで、常在菌の繁殖しやすい環境を整えることで雑菌の繁殖による肌質の低下を押さえることが可能となる。

【0024】(実施例1)以下、本発明の実施例について図面を用いて説明する。

【0025】図1は本発明の実施例の肌質改善装置の構成図である。図1において、使用者10は制御情報入力手段としてのコントロールパネル11で目的とする肌質の改善に関する情報を制御手段としてのマイコン12に入力し、劣化した肌の状態を改善する肌質改善処理を開始する。浴槽13の底面には肌質検知手段としての近赤外吸収測定装置よりなるセンサー14と、浴槽13内に光を照射し、この吸収特性を検知することで使用者10の顔の位置を検知する肌質検知手段としてのセンサー20と、ノズル16がそれぞれ設置されている。ノズル1

6に接続した配管17には流体を搬送するポンプ18と、各種物質を流体中に混合する混合手段19が接続されている。また、浴槽13の底に接続した配管17aには浴槽13内の水に使用者10の顔面の角質を剥離させ角質量を水の濁度で検知する角質検知手段としてのセンサー15と、有機物を検知するセンサー21、有機酸を検知するセンサー22及びこれ等の前に位置する弁23、配管17、17aを切り替える弁24を備えており、弁23には排水用の配管25が設置され、浴槽13内の水を排出可能である。また、弁24には配管26を通して給湯手段27が接続されており、浴槽13内の水を排出可能である。また、弁24には配管26を通して給湯手段27が接続しており、浴槽13への湯または水の供給が可能である。また、混合手段19には配管28を通して抗酸化性物質を貯蔵しているタンク29、機能水を貯蔵するタンク30、無機物質を貯蔵するタンク31、保湿成分を貯蔵するタンク32及び空気を取り入れる配管33がそれぞれ接続されている。そして、抗酸化物質の溶液の入ったタンク29、機能水の入ったタンク30、無機物質溶液の入ったタンク31、保湿成分溶液の入ったタンク32、酸性水の入ったタンク34の上流側及び配管33には二方弁35、36、37、38、39、40が接続されている。さらに、処理前、処理中そして処理後の肌の状況は肌質検知手段からの情報に従い表示手段としてのディスプレイ41に表示される。42は浴槽13の底に設け、生体に低周波を与える低周波発生手段、43はケーブルで、センサー14、15、20、21、22とマイコン12及び、弁23、24、35～40と給湯手段27、ディスプレイ41、低周波発生手段42とマイコン12を電氣的につなぐものである。

【0026】なお、制御手段としてのマイコン12は、制御情報入力手段としてのコントロールパネル11によって入力された美容情報及び肌質検知手段としてのセンサー14、15、20、21、22から得られた肌の状態に関する肌質情報から、肌の状態を判定するためのデータベース及び演算式を保持しており、得られた肌の状態の判定結果をもとに肌質改善手段としてのノズル16、ポンプ18、弁23、24、35、36、37、38、39、40とディスプレイ41、低周波発生手段42の動作を制御するプログラムを保有している。

【0027】次に動作と作用について説明する。まずはじめに、例えば、顔の皮膚の老化防止を行いたい場合、使用者10はコントロールパネル11から、「腕」「老化防止」といった目的とする美容情報を入力する。その後、使用者10は腕を浴槽13に臨ませる。浴槽13内ではセンサー20から使用者10の顔面に光を照射し、この吸収特性をセンサー20で測定することで顔面の位置を検知する。センサー20により位置を確認した後、センサー14によって近赤外光が使用者10の腕に照射

し、吸光特性を測定する。生体の老化が進行すると生体内に老化の指標物質となるAGE (Advanced Glycation

End-production) が生成する。このAGEは750nm付近に吸光性のピークを持つので、750nm付近の近赤外光を照射する事で存在及び量の確認ができる。肌の老化はセンサー14で検知したAGEの分布及び量をもとに、肌質改善処理を行う。一般に、肌の老化は太陽光線の紫外線による細胞構成成分の酸化、または細胞の水分不足、そして、油分の除去のいずれかの不足が原因になっている場合が多い。よって、酸化物質の中和、水分補給、そして余分な油分を除去することによって老化の進行をふせぎ、肌質を維持することができるが、いずれの場合も、過剰な処理はかえって老化を振興させることになるので、十分な注意と経験が必要であった。

【0028】一方、本実施例の美容装置では、浴槽13内の生体としての顔面である使用者10の表皮処理部分とAGE量を赤外吸収測定装置としてのセンサー14で検知し、検知した肌質情報をマイコン12に送る。そして、このマイコン12によってノズル16の方向を決定し、ポンプ18、および給湯手段27の動作を行い、弁23を開いて配管17aに接続し、弁24を開いて配管17と配管26を接続する。次に、マイコン12によって、混合手段19及び弁35、36、37、38、39、40のいずれかに開成して、肌質改善に必要な物質の入った溶液を混合手段19で配管17を流れる湯中に混入し、ノズル16より噴出させ生体10の表皮の老化した部分に接触・吸収させることで、表皮細胞の老化によって生成される物質の生成を停止させ分解し、構造変化を防止することで、肌の老化を防止できる。さらに、使用済の湯は浴槽13に溜まると共にセンサー14からの検知信号によりディスプレイ41で肌質改善処理による生体10の表皮中に生成していた老化指標物質や表皮の構造の変化を視覚的に把握できるので、生体10は効果の確認を容易にできる。

【0029】また、混合手段19を閉じ、先に開成した弁35～40のいずれかを閉じ、弁24を配管26から配管17aに切り替え、ポンプ18を始動し、浴槽13内の水を循環させる。浴槽13内の水を循環させることにより、生体10の表皮から角質成分が水に溶出して汚れているのを、センサー15で濁度として検知される。センサー15で検知した情報がマイコン12に記憶される。生体における表皮細胞の生成周期は個体差はあるものの約28日であり、浴槽13内に溶出する角質成分の変化を約1カ月間測定し、制御手段12内で記憶することにより表皮に堆積している角質の量を推測することができる。この推測値をもとに肌質改善処理の方法、強度を変化させることにより生体10に最適な条件で処理を行うことができる。

【0030】また、使用者10がコントロールパネル11で「顔」、「すべすべ感」と入力した場合には、マイ

コン12により弁24を配管17と26に接続し、かつ給湯手段27、ポンプ18を動作させて浴槽13内に水を満たし、一方、この浴槽13の湯中に顔面を置き、ポンプ18の働きで湯を配管17、17a、浴槽13の回路を循環させ、センサー21で溶存有機物量を測定し、溶存量が少ない場合、表皮細胞の保湿成分が不足していると判断し、弁38を開き混合手段19の働きでタンク32内の保湿成分となるNMFを、配管17を流れる湯中に混入する。なお、NMFとは保湿成分のことで、遊離アミノ酸、ピロリドンカルボン酸、乳酸塩、尿素、クエン酸、無機塩、糖、有機酸、ペプチドを含む溶液である。NMFを表皮に接触させることで、表皮細胞中にNMFを浸透させることが可能となるので、肌に潤いを持たせることが可能となる。なお、NMFの供給量はセンサー21で検出された値をもとにマイコン12で最適値を見積もり、弁38、混合手段19及びポンプ18を動作させているので、供給量が過剰又は不足することはない。

【0031】また、生体10の表皮に存在する角質の量及び位置を角質検知手段としてのセンサー15で検知し、この検知した肌質情報に基づきマイコン12により弁39の開きを調整し、配管17を流れる湯の中に混合する気泡の量を決定し、そしてノズル16、ポンプ18、弁39の動作を制御し、配管33から空気を混入可能にし、混合手段19の働きにより、配管17を通して、浴槽13内の生体10の表皮に存在する角質量が通常の状態に比べて多く検出の場合、気泡量を増加し接触させる。気泡が表皮と接触による部分的な新陳代謝の促進と物理的な剥離作用の相乗効果により角質が剥離促進され、表皮細胞の生成を順調に行わせることができるので、肌のかさつきを防止することができる。

【0032】また、センサー15で角質の量を検知し、制御手段12で処理すべき位置を決定し、ノズル16及びポンプ18を制御し、弁37を開き、タンク31内に入った無機物質を給湯手段27から供給された湯に混合し、ノズル16より噴出させて生体10の表皮に接触させ、表面に存在する角質に浸透させることで角質の軟化が可能となり、すべすべ感を持つ肌質に改善することが可能となる。なお、角質を軟化させる物質としては炭酸化合物があり、特に重炭酸マグネシウム、重炭酸ナトリウムなどのナトリウム、そしてマグネシウムなどのアルカリ土類金属の炭酸塩が望ましい。

【0033】さらに、マイコン12で弁36を開き、混合手段19を制御しタンク30内の機能水を、ポンプ18により配管17を流れる湯中に混入してノズル16より噴出させ生体10の表皮に接触させ、機能水を角質に浸透させる。通常の水よりも機能水の方がクラスター（分子塊）が小さいので、角質への浸透を迅速かつ十分に行うことができる。よって、角質が堆積した部分を軟化することができる。なお、本実施例ではタンクに機能

水を貯蔵する構成としているが、電気分解や磁化処置、赤外線処理などで機能水を生成しながら機能水を供給する構成としてもよい。

【0034】また、使用者10がコントロールパネル11により顔のしみをとるために「顔」「しみとり」と入力した場合、この肌質改善情報を受けてマイコン12に制御されたセンサー14により生体10の表皮の紫外光吸収特性から表皮に生成しているメラニン色素の定量及び位置の検知を行う。生体におけるメラニン色素の生成量は個体差はあるものの、紫外線をうけた量との相関関係があるので、メラニン色素量を検知することにより、被曝した紫外線量及び紫外光により生成した酸化脂質量及び位置の推測が可能となる。生体10内に過酸化脂質が過剰に蓄積すると、肌質を著しく低下させるものとなる。そこで、制御手段12の働きにより、弁35を開き、混合手段19、ノズル16及びポンプ18弁35の動作を制御し、タンク29内の抗酸化物質を、混合手段19で配管17を流れる湯に混入してノズル16から、センサー14で検知した顔面の部分に集中的に接触・浸透させることで酸化物質を中和し、安定な状態の脂質に還元することで、肌質を向上させることができる。なお、抗酸化性物質としてはビタミンA、C、Eなどの各種ビタミンや還元水などの機能水及び細胞の代謝活性を向上させる生理活性物質を用いてもよい。

【0035】なお、センサー14で過酸化脂質が生体10の表皮の比較的深部にあると推測された場合、表皮から抗酸化性物質を接触・浸透させるだけでは長時間を要するので、特に顔面の処理などには適さない。そこで、低周波発生手段42によって生体10の表皮を振動させることで抗酸化性物質の吸収を促進することができるので深部まで抗酸化性物質を短時間で浸透させることが可能となる。

【0036】また、使用者10がコントロールパネル11により顔にできたにきびなどの細菌性の肌質劣化を改善するために「顔」「化膿防止」と入力した場合、この肌質改善情報を受けたマイコン12に制御されたポンプ18により、給湯手段27の湯を配管26、弁24、配管17を介してノズル16から生体10に噴出する。そして、浴槽13に溜まった湯を弁23を開き弁24を切り替えて配管17a～17、浴槽13の回路を循環させ、センサー22で生体10から浴槽13内の水に溶出した有機酸を検知する。有機酸は微生物の代謝によって生成し、細菌の種類ごとに異なる有機酸の生成を行うので、有機酸の検知により、大まかな細菌叢の推測が可能である。センサー22で検知し有機酸が制御手段12によって皮膚常在菌が定常状態で産生するものと異なると判断された場合は、表皮に雑菌が繁殖しているものと判断され、制御手段12によりバルブ40を開き、タンク34内の酸性水をポンプ18により配管17を流れる湯中に混合手段19に混入させ、ノズル16より噴出させて生

体10に当てて、雑菌の殺菌を行う。このようにして雑菌の繁殖を押さえることで肌質の低下を防ぐことができる。

【0037】

【発明の効果】以上の説明から明らかなように、本発明の美容装置によれば、次の効果が得られる。

【0038】1. 制御情報入力手段で得た美容情報をもとに、肌質改善処理の方法、処理すべき部分を決定し、その後、肌質検知手段で生体の皮膚の状態を検知しつつ、制御手段で肌質改善手段を動作することで、使用者が目的とする場所を的確に肌質改善処理することが可能となりかつ、肌質改善処理前、肌質改善処理中、肌質改善処理後の肌質の変化を表示手段に表示することで、使用者は肌質改善処理の進行程度を容易に確認できる。

【0039】2. 生体の皮膚の光吸収特性を光吸収測定装置で測定し、皮膚内の老化物質また色素成分を検知することで、肌質改善処理すべき位置を検知し、制御手段で肌質改善手段を制御し、この部分を集中的に肌質改善処理することができる。よって、的確に肌質改善処理を行うことができる。

【0040】3. 肌質検知手段で表皮細胞の保湿成分の分布状況を検知し、保湿成分が不足する部分に集中的に保湿成分を供給することで、肌全体の保湿成分含有量を均一にできるので、むらのないしっとり感がえられる。

【0041】4. 表皮細胞の細胞生成周期を検知し、制御手段で肌質改善手段を制御し、表皮細胞の生成周期に応じた肌質改善処理を行うことで、肌を痛めず、適切な肌質改善処理が可能となる。

【0042】5. 角質化が進行した部分を肌質検知手段で検知し、肌質改善手段により角質を剥離することにより表皮の他の部分に与える影響をなくし、肌のかさつきを防止することができる。

【0043】6. 肌質検知手段により角質の存在状況を検知し、角質量に応じ、角質軟化手段で表皮に存在する

角質を軟化させることにより、表皮全体にしっとりした肌質に改善することができる。

【0044】7. 肌質検知手段で水分含量の少ない部分を検知し、この部分に機能水生成装置で生成したクラスター径の小さい水を供給することで、肌質の水分含量を最適な状態にすることができる。

【0045】8. 肌質検知手段により表皮の酸化状態を検知し、酸化が進行した部分を集中的に抗酸化物質を供給することで、抗酸化物質の使用を最少にして最大美容効果を得ることができる。

【0046】9. 肌質検知手段により酸化が皮膚の深部まで進行していることが確認された場合だけ、低周波発生装置を稼動することで、使用者に与える低周波による振動を最小にする事ができるので、使用者は振動に肌質改善処理に対する嫌悪感を低減することができる。

【0047】10. また、表皮上の細菌叢を検知し、肌質改善手段で表皮を皮膚常在菌の増殖に最適な状態に調整することで、雑菌の増殖による肌質の低下を抑制することができる。

【図面の簡単な説明】

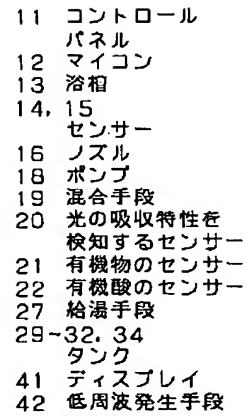
【図1】本発明の実施の形態における美容装置の構成図

【図2】従来の美容装置の構成図

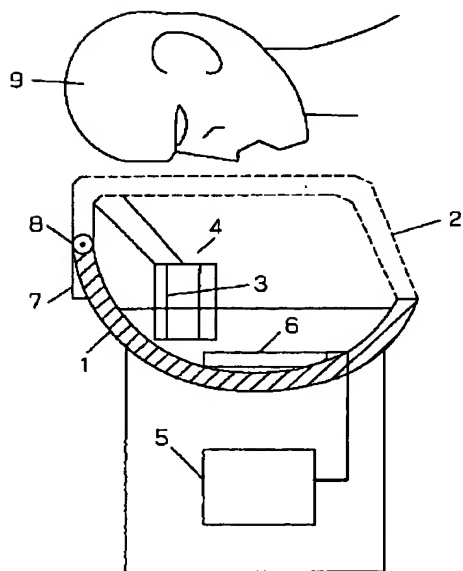
【符号の説明】

- 11 コントロールパネル（制御情報入力手段）
- 12 マイコン（制御手段）
- 14、15 センサー（肌質検知手段）
- 16 ノズル（肌質改善手段）
- 18 ポンプ（肌質改善手段）
- 19 混合手段（肌質改善手段）
- 20～22 センサー（肌質検知手段）
- 29～32、34 タンク（肌質改善手段）
- 33 配管
- 41 ディスプレイ（表示手段）
- 42 低周波発生手段

【図 1】



【図2】



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JAPANESE

[JP, 10-234676, A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL
PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

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CLAIMS

[Claim(s)]

[Claim 1] A skin quality improvement means to improve the condition of the skin which deteriorated, and the control means which controls said skin quality improvement means, A control information input means to input the cosmetics information for improving a living body's skin quality into said control means, Using the information on a skin quality detection means to detect at least one of the skin quality living body's skin quality improvement processing before, under skin quality improvement processing, and after skin quality improvement processing, and said skin quality detection means It is cosmetics equipment with which have a display means to display the skin quality information and said cosmetics information living body's skin quality improvement processing before, under skin quality improvement processing, and after skin quality improvement processing, and said control means comes to control said skin quality improvement means based on the information from said control information input means and said skin quality detection means.

[Claim 2] A skin quality detection means is cosmetics equipment according to claim 1 which is an optical absorption measurement means.

[Claim 3] A skin quality detection means is cosmetics equipment according to claim 1 or 2 which detects a living body's epidermal cell generation period.

[Claim 4] A skin quality improvement means is claim 1 which improves a living body's skin quality by at least one kind of moisturizing component thru/or cosmetics equipment of three given in any 1 term.

[Claim 5] A skin quality improvement means is claim 1 which exfoliates the keratin deposited on a living body's skin thru/or cosmetics equipment of four given in any 1 term.

[Claim 6] A skin quality improvement means is claim 1 which softens the keratin of a living body's skin thru/or cosmetics equipment of five given in any 1 term.

[Claim 7] A skin quality improvement means is claim 1 which supplies the high functional water of the absorptivity by the cell thru/or cosmetics equipment of six given in any 1 term.

[Claim 8] A skin quality improvement means is cosmetics equipment of claim 1 thru/or the any 1 term publication of seven made into an anti-oxidant supply means to supply an anti-oxidant to the skin.

[Claim 9] Claim 1 which a skin quality improvement means becomes from an anti-oxidant addition means and a low frequency generating means thru/or cosmetics equipment of eight given in any 1 term.

[Claim 10] A skin quality improvement means is cosmetics equipment of claim 1 thru/or the any 1 term publication of nine made into the bacterial flora control means.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the cosmetics equipment used for taking care of human being's skin finely.

[0002]

[Description of the Prior Art] This conventional kind of cosmetics equipment had some which are indicated by JP,8-173501,A. The block diagram of conventional cosmetics equipment was shown in drawing 2 . This equipment is work of a blower 5 and is equipped with the heater 3 built in the heating case 4 with which the gassing member 6 which makes underwater [of the water cup 1] generate countless air bubbles, the steam covering 2 with which opening of the water cup 1 is equipped, and the steam covering 2 were equipped. And steam covering is connected with the desorption connection implement 7 through a hinge 8, and by making steam covering 2 into a closed position, a heater 3 heats the water which flows into the heating case 4, and generates a steam. Furthermore, skin quality was raised by promoting the metabolic turnover of an epidermal cell by removing the keratin which washes the skin and exists in a skin front face, and wastes by making the water stored in the water cup 1 in the face 9 which opens the steam covering 2 and faces above the water cup 1 generate countless air bubbles, and cleaning ultrasonically.

[0003]

[Problem(s) to be Solved by the Invention] However, the following technical problems occurred with conventional cosmetics equipment.

[0004] 1. Since optimal skin quality improvement processing is not necessarily performed when a user performs adjustment of the operating time of cosmetics equipment, and processing reinforcement, the cosmetics effectiveness is not fully acquired.

[0005] 2. It cannot grasp objective how many skin quality improvement processings the user has received or how much effectiveness there were.

[0006] 3. Since the living body of the user who becomes an object has much irregularity, the skin quality improvement processing of a part made into the object is difficult for him.

[0007] 4. If processing according to the condition of a user's skin is not performed, the condition of the skin may be spoiled on the contrary.

[0008] This invention cancels the trouble of the above-mentioned Prior art, and while being able to be made to perform an improvement of the skin appropriately based on the skin quality information detected as the cosmetics information which improves the condition of the skin, a user enables it to recognize said both information by the eye.

[0009]

[Means for Solving the Problem] A skin quality improvement means by which this invention improves the condition of the skin that the living body deteriorated, and the control means which controls said skin quality improvement means, A control information input means to input into said control means the cosmetics information for improving the condition of the skin that the living body deteriorated, It has a skin quality detection means to detect at least one of the skin quality information living body's skin quality improvement processing before, under skin quality improvement processing, and after skin quality improvement processing, and a display means to display said cosmetics information information and skin quality information.

[0010] A user the cosmetics information made into the object by and the thing inputted into a control information input

means A skin quality improvement means is operated on the basis of information, such as the content a user wants to improve skin quality, i.e., a part, extent, time amount, and an approach. The gestalt-description of the living body [means / skin quality detection] under skin quality improvement processing and before and behind skin quality improvement processing at the same time it performs skin quality improvement processing of a living body, The situation of an epidermal cell and health condition can be detected, the skin quality information acquired here can be displayed on a display means, and a living body can be made to recognize the progress situation and processing result of skin quality improvement processing.

[0011] Furthermore, it can determine for the cosmetics information which obtained control of a skin quality improvement means with the control information input means, and changing actuation of a skin quality improvement means according to change of the skin quality information continuously acquired from a skin quality detection means can perform skin quality improvement processing in the optimal condition for a living body.

[0012]

[Embodiment of the Invention] A skin quality improvement means by which invention according to claim 1 in this invention improves a living body's skin quality, The control means which controls said skin quality improvement means, and a control information input means to input the cosmetics information for improving a living body's skin quality into said control means, It has a display means to display a skin quality detection means to detect at least one of the biological information living body's skin quality improvement processing before, under skin quality improvement processing, and after skin quality improvement processing, said cosmetics information, and biological information. Said control means controls said cosmetics improvement means based on the information on said control information input means and said skin quality detection means.

[0013] And cosmetics information, such as a part which desires skin quality improvement processing which a user expects to the control means which controls a cosmetics acceleration means, the content of skin quality improvement processing, processing reinforcement, and time amount, is inputted, a control means performs motion control of a cosmetics acceleration means, and skin quality improvement processing is performed to a living body. Moreover, a cosmetics acceleration means equipment in use can be worked under the optimal conditions for a living body by detecting biological information, such as physiological information, such as a user's health condition, and morphological information, detecting said biological information at any time, transmitting this information to a control means after that, and performing motion control of a cosmetics acceleration means with a skin quality detection means, before skin quality improvement processing. Furthermore, a user can be made to grasp the cosmetics effectiveness objective by displaying the biological information after [before the skin quality improvement processing detected with the skin quality detection means] skin quality improvement processing and under skin quality improvement processing on a display means.

[0014] Moreover, invention according to claim 2 is using the skin quality detection means as the optical absorption measuring device. And AGE of the brown matter which irradiates the beam of light of specific wavelength at a living body's epidermal cell, and serves as an index of aging of a cell from the absorption coefficient (Advanced Glycation End-Production), Or since the location and standing crop of a melanin which are generated by the exposure of ultraviolet rays in the living body are detectable Since the part into which aging or deterioration of skin quality is advancing can be guessed easily, a skin quality improvement means is controlled by the control means, it becomes possible to perform skin quality improvement processing to this part intensively, and exact skin quality improvement processing is attained.

[0015] Moreover, as for invention according to claim 3, the skin quality detection means is detecting the generation period of a living body's epidermal cell.

[0016] and the guess of the amount of keratin to which detecting a living body's epidermal cell generation period obtains time amount change of the keratin which exfoliated by the skin quality detection means and the control means, and a next door and a living body do epidermis deposition by ***** chair ***** is attained. Therefore, the skin quality improvement processing according to the states of being of the keratin of epidermis is attained.

[0017] Moreover, as for a skin quality improvement means, invention according to claim 4 has improved a living body's skin quality by at least one or more moisturizing components. And admiration can be gently given to the skin by making a moisturizing component permeate epidermis with a skin quality improvement means based on the skin quality information detected with the skin quality detection means.

[0018] Moreover, invention according to claim 5 exfoliates keratin with a skin quality improvement means. And the part into which keratinization of living body epidermis advanced with the skin quality detection means is detected, by processing intensively with a keratin exfoliation means, effect which it has on other parts of epidermis is made into min,

and the exfoliation effectiveness of the greatest keratin is acquired. Therefore, it can prevent with [of the skin] bulk.

[0019] Moreover, invention according to claim 6 softens the keratin of epidermis with a skin quality improvement means. And the location of keratin where hardening on a living body's epidermis advanced with the skin quality detection means with the skin quality improvement means is detected, and admiration is gently given to the skin by softening these keratin.

[0020] Moreover, invention according to claim 7 supplies the functional water of the absorptivity of a cell with a high skin quality improvement means. And hydration of the effective skin can be performed by making a skin quality improvement means into a functional water generation means, measuring the moisture content of the skin with a skin quality detection means, generating the high functional water of absorptivity into a living body cell, and making a cell permeate directly from epidermis.

[0021] Moreover, invention according to claim 8 makes the skin quality improvement means an anti-oxidant supply means to supply an anti-oxidant. And a skin quality improvement means is made into an anti-oxidant supply means to supply an anti-oxidant, the oxidation state of epidermis is detected with a skin quality detection means, an anti-oxidant is intensively supplied to the part to which oxidation went remarkably, and generation of an oxidation lipid is controlled by making it react with an oxidation lipid in the living body.

[0022] Moreover, in invention according to claim 9, a skin quality improvement means consists of an anti-oxidant supply means and a low frequency generating means. And since the osmosis rate to the cell of an anti-oxidant can be gathered by giving a living body low frequency processing with a low frequency generating means at supply and coincidence of an anti-oxidant, a quick skin quality improvement is attained. Furthermore, it becomes possible to make an anti-oxidant permeate the depths of epidermis, even when an oxidizing substance is detected to the depths with a skin quality detection means, neutralization becomes possible, and an effective skin quality improvement can be performed.

[0023] Moreover, invention according to claim 10 makes a skin quality improvement means a bacterial flora control means. And the metabolite of bacteria, such as an organic acid, is detected with a skin quality detection means, the bacterial flora on epidermis is guessed by the control means from the acquired information, and the dominance of bacteria other than a skin normal bacterial flora becomes possible [pressing down deterioration of the skin quality by propagation of saprophytic bacteria by preparing the environment where a normal bacterial flora tends to breed] by controlling growth of these bacteria by the bacterial flora control means at a check ***** case.

[0024] (Example 1) The example of this invention is hereafter explained using a drawing.

[0025] Drawing 1 is the block diagram of the skin quality improvement equipment of the example of this invention. In drawing 1, skin quality improvement processing in which a user 10 inputs into the microcomputer 12 as a control means the information about the improvement of skin quality made into the object with the control panel 11 as a control information input means, and the condition of the skin which deteriorated is improved is started. The sensor 14 which becomes the base of an organ bath 13 from the near-infrared absorption measuring device as a skin quality detection means, the sensor 20 as a skin quality detection means to detect the location of a user's 10 face by irradiating light in an organ bath 13 and detecting this absorption property, and the nozzle 16 are installed, respectively. A mixed means 19 to mix various matter with the pump 18 which conveys a fluid in a fluid is connected to the piping 17 linked to a nozzle 16. Moreover, the sensor 15 as a keratin detection means to make the keratin of a user's 10 face exfoliate in the water in an organ bath 13 at piping 17a linked to the bottom of an organ bath 13, and to detect the amount of keratin with the turbidity of water, It has the valve 23 located before the sensor 21 which detects the organic substance, the sensor 22 which detects an organic acid, this, etc., and the valve 24 which changes Piping 17 and 17a, the piping 25 for wastewater is installed in a valve 23, and the water in an organ bath 13 can be discharged. Moreover, the hot-water-supply means 27 is connected to the valve 24 through piping 26, and the water in an organ bath 13 can be discharged. Moreover, the hot-water-supply means 27 has connected with a valve 24 through piping 26, and supply of the molten bath to an organ bath 13 or water is possible. Moreover, the piping 33 which adopts the tank 29 which has stored the anti-oxidant through piping 28, the tank 30 which stores functional water, the tank 31 which stores mineral matter, the tank 32 which stores a moisturizing component, and air is connected to the mixed means 19, respectively. And two-way valves 35, 36, 37, 38, 39, and 40 are connected to the upstream and piping 33 of the tank 29 containing the solution of an antioxidant, the tank 30 containing functional water, the tank 31 containing a mineral matter solution, the tank 32 containing a moisturizing component solution, and the tank 34 containing acid water. Furthermore, the situation of the skin under [before processing] processing and after processing is displayed on the display 41 as a display means according to the information from a skin quality detection means. Preparing 42 in the bottom of an organ bath 13, a low frequency generating means to give a living body low frequency, and 43 are cables, and connect electrically sensors 14, 15, 20, 21,

and 22, a microcomputer 12 and valves 23, 24, 35-40, the hot-water-supply means 27, a display 41 and the low frequency generating means 42, and a microcomputer 12.

[0026] in addition, the microcomputer 12 as a control means from the skin quality information about the condition of the skin obtained from the sensors 14, 15, 20, 21, and 22 as the cosmetics information and the skin quality detection means which were inputted by the control panel 11 as a control information input means The database and operation expression for judging the condition of the skin are held. The program which controls actuation of the nozzle 16 as a skin quality improvement means, a pump 18, valves 23, 24, 35, 36, 37, 38, 39, and 40 and a display 41, and the low frequency generating means 42 based on the judgment result of the condition of the obtained skin is held.

[0027] Next, actuation and an operation are explained. A user 10 inputs first the cosmetics information made into the objects, such as a "arm" and "aging prevention", from a control panel 11 to perform aging prevention of the skin of a face. Then, a user 10 makes an organ bath 13 face an arm. Within an organ bath 13, the location of the face is detected from a sensor 20 to a user's 10 face by measuring this absorption property for light by the sensor 20 at an exposure. After checking a location by the sensor 20, by the sensor 14, near-infrared light irradiates a user's 10 arm, and measures an extinction property. If a living body's aging advances, AGE (Advanced Glycation End-production) used as the index matter of aging will generate in the living body. Since this AGE has the peak of extinction nature near 750nm, existence and the check of an amount can be performed by irradiating the near-infrared light near 750nm. Based on the distribution and the amount of AGE which were detected by the sensor 14, aging of the skin performs skin quality improvement processing. Generally, oxidation of the cell constituent according [aging of the skin] to the ultraviolet rays of sunrays or the lack of moisture of a cell, and lack of either of the clearances of an oil content are the cause in many cases. Therefore, although it is removing neutralization of the quality of an oxide, hydration, and an excessive oil content, progress of aging could be prevented and skin quality could be maintained, since superfluous processing made aging promoted on the contrary, sufficient caution and a sufficient experience were required in any case.

[0028] On the other hand, with the cosmetics equipment of this example, a user's 10 epidermis processing part and amount of AGE which are the face as a living body in an organ bath 13 are detected by the sensor 14 as an infrared-absorption measuring device, and the detected skin quality information is sent to a microcomputer 12. And with this microcomputer 12, the direction of a nozzle 16 is determined, actuation of a pump 18 and the hot-water-supply means 27 is performed, a valve 23 is opened, it connects with piping 17a, a valve 24 is opened, and piping 17 and piping 26 are connected. Next, Kaisei is carried out with a microcomputer 12 to either the mixed means 19 and the valves 35, 36, 37, 38, 39, and 40. By making it contact and absorb into the part into which piping 17 was mixed with the mixed means 19 all over the flowing molten bath, the solution containing the matter required for a skin quality improvement was gushed from the nozzle 16, and a living body's 10 epidermis aged Generation of the matter generated by aging of an epidermal cell is stopped, it decomposes, and aging of the skin can be prevented by preventing a structural change. Furthermore, since change of the structure of the aging index matter which was being generated in the epidermis of the living body 10 by skin quality improvement processing on the display 41 with the detection signal from a sensor 14 or epidermis can be visually grasped while an organ bath 13 is covered with a used molten bath, a living body 10 can make the check of effectiveness easy.

[0029] Moreover, closing or the valves 35-40 which carried out Kaisei previously are changed to closing, a valve 24 is changed from piping 26 for the mixed means 19 to piping 17a, a pump 18 is put into operation, and the water in an organ bath 13 is circulated. By circulating the water in an organ bath 13, it detects as turbidity that the keratin component elutes and is dirty in water from a living body's 10 epidermis by the sensor 15. The information detected by the sensor 15 is memorized by the microcomputer 12. Individual difference is about 28 days of a certain thing, and the generation period of the epidermal cell in a living body can measure change of the keratin component eluted in an organ bath 13 for about one month, and can guess the amount of the keratin deposited on epidermis by memorizing within a control means 12. It can process on the optimal conditions for a living body 10 by changing the approach of skin quality improvement processing, and reinforcement based on this guess value.

[0030] moreover, when a user 10 inputs a "face" and a "smooth feeling" with a control panel 11 Connect a valve 24 to piping 17 and 26 with a microcomputer 12, and operate the hot-water-supply means 27 and a pump 18, and water is filled in an organ bath 13. On the other hand, the face is placed all over the molten bath of this organ bath 13. A molten bath by work of a pump 18 Piping 17 and 17a, The circuit of an organ bath 13 is circulated, the amount of dissolved organic substance is measured by the sensor 21, when there are few dissolved amounts, it judges that the moisturizing components of an epidermal cell are insufficient, and NMF which serves as a moisturizing component in a tank 32 by work

of the aperture mixing means 19 in a valve 38 is mixed all over the molten bath which flows piping 17. In addition, NMF is a moisturizing component and is a solution containing a free amino acid, a pyrrolidone carboxylic acid, a lactate, a urea, a citric acid, mineral salt, sugar, an organic acid, and a peptide. Since it becomes possible by contacting NMF on epidermis to make NMF permeate into an epidermal cell, it becomes possible to give grace to the skin. In addition, since the amount of supply of NMF estimates the optimal amount with a microcomputer 12 based on the value detected by the sensor 21 and the valve 38, the mixed means 19, and the pump 18 are operated, superfluous ** does not run short of the amount of supply.

[0031] Moreover, the amount and location of keratin which exist in a living body's 10 epidermis are detected by the sensor 15 as a keratin detection means. Based on this detected skin quality information, a microcomputer 12 adjusts the aperture of a valve 39. The amount of the air bubbles which mix piping 17 in the flowing molten bath is determined, and actuation of a nozzle 16, a pump 18, and a valve 39 is controlled, and air is made mixable from piping 33. By work of the mixed means 19 Compared with the usual condition, in detection, the amount of keratin which exists in the epidermis of the living body 10 in an organ bath 13 increases, and contacts many amounts of air bubbles through piping 17. Since exfoliation acceleration of the keratin is carried out by the synergistic effect of a physical exfoliation operation with acceleration of the partial metabolism according [air bubbles] to epidermis and contact and an epidermal cell can be made to generate favorably, it can prevent with [of the skin] bulk.

[0032] Moreover, the location which should detect the amount of keratin by the sensor 15 and should be processed by the control means 12 is determined. Control a nozzle 16 and a pump 18 and the mineral matter which entered the valve 37 in the aperture and the tank 31 is mixed in the molten bath supplied from the hot-water-supply means 27. Make it spout from a nozzle 16, a living body's 10 epidermis is made to contact, softening of keratin is attained by making the keratin which exists in a front face permeate, and it becomes possible to improve to skin quality with a smooth feeling. In addition, there is a carbonic acid compound as matter which softens keratin, and the carbonate of alkaline earth metal, such as sodium, such as a heavy magnesium carbonate and sodium bicarbonate, and magnesium, is especially desirable.

[0033] Furthermore, an aperture and the mixed means 19 are controlled for a valve 36 by the microcomputer 12, mix all over the molten bath which flows piping 17 with a pump 18, it is made to spout from a nozzle 16, the functional water in a tank 30 is contacted on a living body's 10 epidermis, and functional water is made to permeate keratin. since the cluster (molecule lump) is small, its functional water is quicker than usual water in osmosis in keratin -- and it can fully carry out. Therefore, the part which keratin deposited can be softened. In addition, although considered as the configuration which stores functional water in a tank in this example, it is good also as a configuration which supplies functional water, generating functional water by electrolysis, magnetization treatment, infrared processing, etc.

[0034] in order that [moreover,] a user 10 may take the stain of a face with a control panel 11 -- "a face" -- "-- permeating -- taking -- " -- when it inputs, the quantum of the melanin currently generated on epidermis from the ultraviolet radiation absorption property of a living body's 10 epidermis by the sensor 14 controlled by the microcomputer 12 in response to this skin quality improvement information and detection of a location are performed. Since individual difference has a correlation with the amount which received the ultraviolet rays of a certain thing, the guess of the amount of oxidation lipids and location which were generated by the amount of ultraviolet rays and ultraviolet radiation which were contaminated of the amount of generation of the melanin in a living body is attained by detecting a melanin color quantum. If peroxy lipid is superfluously accumulated into a living body 10, it will become the basis on which skin quality is reduced remarkably. Then, actuation of an aperture, the mixed means 19, a nozzle 16, and pump 18 valve 35 is controlled for a valve 35 by work of a control means 12. The antioxidant in a tank 29 is mixed in the molten bath which flows piping 17 with the mixed means 19, from a nozzle 16, the quality of an oxide can be neutralized by making it contact and permeate intensively into the part of the face detected by the sensor 14, and skin quality can be raised by returning to the lipid of a stable condition. In addition, the physiological active substance which raises the metabolic activity of functional water, such as various vitamins, such as vitamin A, and C, E, and restoration water, and a cell as an anti-oxidant may be used. [0035] In addition, by the sensor 14, when [of a living body's 10 epidermis] it is surmised that it is in the depths comparatively, since only making an anti-oxidant contact and permeate from epidermis takes peroxy lipid long duration, it is not especially suitable for processing of the face by it. Then, since absorption of an anti-oxidant can be promoted by vibrating a living body's 10 epidermis with the low frequency generating means 42, it becomes possible to make an anti-oxidant permeate to the depths for a short time.

[0036] Moreover, in order that a user 10 may improve bacterial skin quality degradation of the pimple made to the face with the control panel 11, when a "face" and "suppuration prevention" are inputted, the pump 18 controlled by the carrier

beam microcomputer 12 in this skin quality improvement information spouts the molten bath of the hot-water-supply means 27 from a nozzle 16 to a living body 10 through piping 26, a valve 24, and piping 17. And the aperture valve 24 is changed [the molten bath collected on the organ bath 13] for a valve 23, the circuit of piping 17a-17 and an organ bath 13 is circulated, and the organic acid eluted in the water in an organ bath 13 from the living body 10 by the sensor 22 is detected. Since the metabolic turnover of a microorganism generates an organic acid and a different organic acid for every bacterial class is generated, the guess of a rough bacterial flora is possible by detection of an organic acid. It detects by the sensor 22, and make the mixed means 19 mix all over the molten bath which saprophytic bacteria shall breed on epidermis, and flows the acid water in an aperture and a tank 34 in a bulb 40 by the control means 12, and flows piping 17 with a pump 18 when it is judge that an organic acid differs from what a skin normal bacterial flora produces by the steady state by the control means 12, and it is make to spout from a nozzle 16, calls on a living body 10, and saprophytic bacteria are sterilize. Thus, deterioration of skin quality can be prevented by pressing down propagation of saprophytic bacteria.

[0037]

[Effect of the Invention] According to the cosmetics equipment of this invention, the following effectiveness is acquired so that clearly from the above explanation.

[0038] 1. In Operating Skin Quality Improvement Means by Control Means, Determining the Approach of Skin Quality Improvement Processing, and Part Which Should be Processed, and Detecting Condition of Living Body's Skin with Skin Quality Detection Means after that Based on Cosmetics Information Acquired with Control Information Input Means A user can check progress extent of skin quality improvement processing easily by enabling a user to carry out skin quality improvement processing of the target location exactly, and displaying change of the skin quality under [before skin quality improvement processing] skin quality improvement processing and after skin quality improvement processing on a display means.

[0039] 2. The optical absorption property of a living body's skin is measured with an optical absorption measuring device, by detecting the aging matter and coloring matter component in the skin, the location which should carry out skin quality improvement processing can be detected, a skin quality improvement means can be controlled by the control means, and skin quality improvement processing of this part can be carried out intensively. Therefore, skin quality improvement processing can be performed exactly.

[0040] 3. By supplying a moisturizing component to the part which detects the distribution situation of the moisturizing component of an epidermal cell with a skin quality detection means, and runs short of moisturizing components intensively, since the moisturizing component content of the whole skin is made to homogeneity, it is uniform and admiration is obtained gently.

[0041] 4. The cell generation period of an epidermal cell is detected, a skin quality improvement means is controlled by the control means, and performing skin quality improvement processing according to the generation period of an epidermal cell does not hurt the skin, but suitable skin quality improvement processing is attained.

[0042] 5. The part into which keratinization advanced can be detected with a skin quality detection means, the effect which it has on other parts of epidermis by exfoliating keratin with a skin quality improvement means can be lost, and it can prevent with [of the skin] bulk.

[0043] 6. It is improvable to the skin quality gently used as the whole epidermis by detecting the states of being of keratin with a skin quality detection means, and softening the keratin which exists in epidermis with a keratin softening means according to the amount of keratin.

[0044] 7. The moisture content of skin quality can be changed into the optimal condition by supplying the small water of the diameter of a cluster which detected the part with few moisture contents with the skin quality detection means, and was generated with functional water generation equipment into this part.

[0045] 8. The oxidation state of epidermis is detected with a skin quality detection means, by supplying an anti-oxidant for the part into which oxidation advanced intensively, the activity of an antioxidant can be made into the minimum and the greatest cosmetics effectiveness can be acquired.

[0046] 9. Since the oscillation by the low frequency which gives a user a low frequency generator by working can be made into min only when it is checked that oxidation is advancing to the depths of the skin with the skin quality detection means, a user can reduce to an oscillation the feeling of dislike which receives skin quality improvement processing.

[0047] 10. Moreover, the bacterial flora on epidermis can be detected and deterioration of the skin quality by growth of saprophytic bacteria can be controlled by adjusting epidermis to the optimal condition for growth of a skin normal bacterial

flora with a skin quality improvement means.

[Translation done.]

JAPANESE

[JP, 10-234676, A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL
PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

* NOTICES *

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The block diagram of the cosmetics equipment in the gestalt of operation of this invention

[Drawing 2] The block diagram of conventional cosmetics equipment

[Description of Notations]

11 Control Panel (Control Information Input Means)

12 Microcomputer (Control Means)

14 15 Sensor (skin quality detection means)

16 Nozzle (Skin Quality Improvement Means)

18 Pump (Skin Quality Improvement Means)

19 Mixed Means (Skin Quality Improvement Means)

20-22 Sensor (skin quality detection means)

29- 32 and 34 Tank (skin quality improvement means)

33 Piping

41 Display (Display Means)

42 Low Frequency Generating Means

[Translation done.]